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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,319	11/14/2003	Joong-Hwan Choi	1349.1310	1984

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EXAMINER

BRASE, SANDRA L

ART UNIT	PAPER NUMBER
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2852

DATE MAILED: 03/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/712,319

Applicant(s)

CHOI ET AL.

Examiner

Sandra L. Brase

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 1". Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities.

Appropriate correction is required.

On page 3, line 20, "21" should be changed to "31".

Claim Objections

3. Claims 1-9 are objected to because of the following informalities: on line 3 of claim 1, “a a” should be changed to “a”. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1, 3-5 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Waschke et al. (US 4,202,618) in view of Kim (US 6,041,201).

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7. Waschk et al. (...618) disclose a gas exhausting apparatus for use in an electrophotographic image forming device, where the apparatus comprising: an exhaust duct forming an air flow passage (figure) from an inside of an electrophotographic image forming device to an outside of the device; exhaust fans (20 and 25) for moving air from the inside of the device through the exhaust duct and exhausting the air through the exhaust duct to the outside of the device; and an air purification unit (22) that removes impurities included in the air moved by exhaust fan through the exhaust duct; and wherein the exhaust duct includes a first guide (21) formed to move and guide impurity-containing high temperature air in the device and having the air purification unit (22) disposed therein to pass the impurity-containing air through the air purification unit (figure); a second guide (24) formed to move and guide non-impurity-containing air of room temperature in the device (figure); and an exhaust guide formed to communicate with the first guide and the second guide and having the impurity-containing air, guided in the first guide, and the non-impurity-containing air, guided in the second guide, mix therein and then exhaust the impurity-containing air and the non-impurity-containing air to the outside of the device at an exhaust portion (abstract; col. 4, lines 39-59; and figure). The first exhaust guide having an inlet at an end distal to the second exhaust guide, and the second exhaust guide having an inlet at a distal end to the exhaust portion (figure). However, Waschk et al. (...618) do not disclose the image forming apparatus includes a wet electrophotographic image forming device, claimed exhaust fan that inhales air and is in the end of the exhaust portion, and the claimed type of air purification unit. Kim (...201) discloses an image forming apparatus including a wet electrophotographic image forming device (col. 1, lines 11-17) with an exhaust guide and an exhaust fan (400) that is in an exhaust end portion of the exhaust guide,

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where the fan inhales air inside the apparatus to exhaust the inhaled air to outside of the apparatus (figure 2; and col. 2, lines 37-39). The air purification unit further comprises a combustion part to remove impurities from air passing therethrough by thermally decomposing and oxidizing the impurities by heating and catalyst-oxidizing the air (col. 2, lines 37-56). The combustion part of the air purification unit comprises a heater (300) that generates heat by an electric power. The air purification unit further comprises an oxidation catalyst part disposed proximate to the heater to promote oxidation of the impurities (col. 2, lines 37-56). It would have been obvious to one of ordinary skill in the art at the time of the invention to have the image forming apparatus include a wet electrophotographic image forming device, as claimed by Kim (...201), since it is well known in the art to form an image with a wet electrophotographic image forming device. Moreover, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the claimed exhaust fan that inhales air and is at the end of the exhaust portion since such a placement of a fan inside of an apparatus to exhaust air, as disclosed by Kim (...201), since such is well known in the art for moving air from inside the apparatus to outside the apparatus. Also, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the claimed type of air purification unit, as disclosed by Kim (...201), since such an air purification unit decomposes solvent so the filter can be reused.

8. Claims 2 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Waschke et al. (US 4,202,618) in view of Kim (US 6,041,201) as applied to claims 1 and 5 above, and further in view of Kurotori et al. (US 4,415,533).

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9. Waschk et al. (...618) in view of Kim (...201) disclose the features mentioned previously, and Waschk et al. (...618) disclose the first guide having an inlet disposed proximate to a fusing unit to inhale impurity-containing air including gas generated during a fusing operation (figure), and Kim (...201) disclose a catalyst coated on an outer surface of a catalyst-carrier body composed of platinum (col. 2, lines 40-43). However, Waschk et al. (...618) in view of Kim (...201) do not disclose the fusing unit including a pressing roller and a heating roller, the material of the catalyst-carrier body and the catalyst carrier body comprising a plurality of openings. Kurotori et al. (...533) disclose an image forming apparatus including an inhalation guide with an inlet proximate to a fusing unit (figure 3), where the fusing unit includes a pressing roller (10) and a heating roller (10), where impurity containing air including a gas generated during a fusing operation (figure 3). A purification unit is included in the inhalation guide, and the purification unit includes a catalyst carried on a carrier made of alumina or diatom earth (col. 3, lines 30-48). The catalyst carrier body includes a plurality of openings arranged in an air flow direction (col. 4, lines 38-50). It would have been obvious to one of ordinary skill in the art at the time of the invention to have the fusing unit include a pressing roller and a heating roller, as disclosed by Kurotori et al. (...533) since such elements are well known in the art for fusing images in an image formation process. Moreover, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the catalyst-carrier body contained in the purification unit be of alumina or diatom earth, as disclosed by Kurotori et al. (...533) since such a material is considered to be a normal carrier for catalysts. Also, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the claimed

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plurality of openings in the catalyst carrier-body, as disclosed by Kurotori et al. (...533), since this is considered to be a normal structure for such a catalyst carrier-body.

Prior Art

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yamamoto et al. (US 5,047,798), Fujimura et al. (US 5,371,577), Cho (US 5,946,528), Hiraoka et al. (US 6,094,549), Cho et al. (US 6,339,688) and Ramos (US 6,577,828) disclose an image forming apparatus including an air purification unit.

Rowe (US 4,666,282) discloses an image forming apparatus including a mixing chamber for mixing non-impurity-containing air and impurity-containing air.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sandra L. Brase whose telephone number is (571) 272-2131. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur T. Grimley, can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sandra L. Brase
Primary Examiner
Art Unit 2852

March 28, 2005